Model Boilers for Boilers Firing Wood, Fossil, and Non-Fossil Materials

IV.A. Fossil Fuel Boilers

History:

- Fossil fuel model boilers were presented at the February Boiler WG meeting. Comments were received from the WG and EPA revised the models. No updates have been made since the April Boiler WG meeting.

Current Status:

- Tables IV.A-1 through IV.A-9 contain fossil fuel-fired model boilers.

Notes:

- Fossil fuel models were developed from boilers in the inventory database only.
- Fossil models are categorized by fuel, boiler type, and capacity. Initially, fossil models from earlier EPA documents (such as the NO_x NSPS) were compiled and used as a starting point for these fossil models. Many of the similar models were then combined because their differences were not significant and/or the inventory database did not provide specific information required to assign the boilers within the original models.
- Most boilers were assigned to models based on their Source Classification Code. Unlike the survey database, the inventory database does not typically provide detailed boiler information.

IV.B. Wood Boilers

History:

- Wood model boilers were presented at the February Boiler WG meeting. Comments were received from the WG and EPA revised the models. The wood models were later updated for the April, May, and June meetings based on WG comments.

Current Status:

- Tables IV.B-1 through IV.B-4 contain wood-fired model boilers. Based on WG comments at the June meeting, these models have been updated once more.

Notes:

- Wood models include all boilers burning >50% wood except units co-firing non-fossil fuels. Wood models were developed from boilers in the survey database only.

- Wood-fired boilers were divided into 4 combustor categories:
  - Fluidized bed
  - Stokers and dutch ovens
  - Cyclones
  - Other (consisting of tangentially fired, wall fired, and unknown boiler types)

  Note: If a boiler was reported by plant personnel as a fluidized bed *and* a stoker boiler, it was classified as fluidized bed. Likewise, a boiler reported as a stoker and a cyclone was classified as a stoker.

- To reduce the number of boilers classified as "unknown capacity," all available capacity information in the survey database (e.g., lb steam/hr, tons wood/day) were converted to MMBtu/hr. These boilers were then placed in the appropriate model.

- Attached is a document prepared by the wood subgroup which explains the rationale for the size groupings for biomass-fired boilers.

IV.C. Non-Fossil Fuel Boilers

History:

- Non-fossil fuel model boilers were presented at the February Boiler WG meeting. Since then, substantial changes have been made to the models based on WG comments.

Current Status:

- Tables IV.C-1 through IV.C-4 contain non-fossil model boilers. Based on non-fossil subgroup comments at the June and July meetings, these models have been updated once more.

Notes:

- Non-fossil boilers were divided into 4 combustor categories:
  - Fluidized bed
  - Stokers (including dutch ovens)
  - Suspension units (consists of wall-fired, tangentially-fired, and cyclone boilers)

- Other

Note: If a boiler was reported by plant personnel as a fluidized bed *and* a stoker boiler, it was classified as fluidized bed. Likewise, a boiler reported as a stoker and a wall-fired unit was classified as a stoker.

- A 5% de minimis level was used for all fuels.

- To reduce the number of non-fossil models, cleaner burning fuels such as natural gas, fuel oil, and low and high Btu gas were combined with 'dirtier' fuels (e.g., coal, TDF, etc.) where possible. For example, a model boiler burning wood, coal, and natural gas was combined with a model burning wood and coal since HAP emissions from the natural gas are insignificant compared to emissions from the 'dirtier' fuels.

- Non-fossil models were developed from boilers in the survey database. In addition, bagasse-fired boilers from the inventory database were included.

- All bagasse boilers in the inventory database were assumed to fire >95% bagasse (there is no % fuel data in this database). Bagasse boilers in the survey database were handled the same as the other survey database boilers.

Table IV.A-1. Natural Gas Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
98-100, 111-113[a]	Field-erected and packaged watertube	Natural Gas	100	65-125	1,080	3%
101-103, 115-117[a]	Field-erected and packaged watertube	Natural Gas	250	200-375	414	1%
104-106[b]	Field-erected watertube	Natural Gas	500	375-750	158	0.4%
107-109[b]	Field-erected watertube	Natural Gas	1,000	>750	257	1%
NA	Packaged firetube	Natural Gas	NA	0-10	27,681	75%
110	Packaged firetube	Natural Gas	30	10-65	6,674	18%
114	Packaged watertube	Natural Gas	150	125-200	493	1%
Boilers Without Specific Capacity Data[c]						
NA	NA	Natural Gas	---	10-100	4,911	---
NA	NA	Natural Gas	---	<100	328	---
NA	NA	Natural Gas	---	>100	1,239	---
NA	NA	Natural Gas	---	Unknown	1,712	---

[a] These model boilers are grouped together because their only difference is load factor and boiler type, and the database does not provide this information.

[b] These model boilers are grouped together because their only difference is load factor, and the database does not provide this information.

[c] These boilers do not have specific capacity information in the database. Capacity ranges are based on SCC data.

Table IV.A-2. Distillate Oil Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
78-80, 91-93[a]	Field-erected and packaged watertube	Distillate Oil	100	65-125	120	3%
81-83, 95-97[a]	Field-erected and packaged watertube	Distillate Oil	250	200-375	26	1%
84-86[b]	Field-erected watertube	Distillate Oil	500	375-750	10	0.3%
87-89[b]	Field-erected watertube	Distillate Oil	1,000	>750	18	0.5%
NA	Packaged firetube	Distillate Oil	NA	0-10	3,028	77%
90	Packaged firetube	Distillate Oil	30	10-65	706	18%
94	Packaged watertube	Distillate Oil	150	125-200	28	1%
Boilers Without Specific Capacity Data[c]						
NA	NA	Distillate Oil	---	10-100	51	---
NA	NA	Distillate Oil	---	Unknown	2,681	---

[a] These model boilers are grouped together because their only difference is load factor and boiler type, and the database does not provide this information.

[b] These model boilers are grouped together because their only difference is load factor, and the database does not provide this information.

[c] These boilers do not have specific capacity information in the database. Capacity ranges are based on SCC data.

Table IV.A-3. Residual Oil Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
57-59, 71-73[a]	Field-erected and packaged watertube	Residual Oil	100	65-125	658	13%
60-62, 75-77[a]	Field-erected and packaged watertube	Residual Oil	250	200-325	141	3%
63	Field-erected watertube	Residual Oil	400	325-450	39	1%
64-66[b]	Field-erected watertube	Residual Oil	500	450-750	38	1%
67-69[b]	Field-erected watertube	Residual Oil	1,000	>750	39	1%
NA	Packaged firetube	Residual Oil	NA	0-10	1,094	22%
70	Packaged firetube	Residual Oil	30	10-65	2,648	54%
74	Packaged watertube	Residual Oil	150	125-200	240	5%
Boilers Without Specific Capacity Data[c]						
NA	NA	Residual Oil	---	10-100	58	---
NA	NA	Residual Oil	---	Unknown	2,990	---

[a] These model boilers are grouped together because their only difference is load factor and boiler type, and the database does not provide this information.

[b] These model boilers are grouped together because their only difference is load factor, and the database does not provide this information.

[c] These boilers do not have specific capacity information in the database. Capacity ranges are based on SCC data.

Table IV.A-4. Fluidized Bed Combustion Coal Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Fluidized Bed Combustion	Coal	NA	0-10	6	19%
30-32[a]	Fluidized Bed Combustion	Coal	100	10-175	12	38%
33-35[a]	Fluidized Bed Combustion	Coal	250	175-375	2	6%
36-38[a]	Fluidized Bed Combustion	Coal	500	375-750	9	28%
39-41[a]	Fluidized Bed Combustion	Coal	1,000	>750	3	9%
Boilers Without Specific Capacity Data[b]						
NA	Fluidized Bed Combustion	Coal	---	<100	1	---
NA	Fluidized Bed Combustion	Coal	---	>100	3	---
NA	Fluidized Bed Combustion	Coal	---	Unknown	20	---

[a] These model boilers are grouped together because their only difference is load factor and the database does not provide this information.

[b] These boilers do not have specific capacity information in the database. Capacity ranges are based on SCC data.

Table IV.A-5. Pulverized Coal, Wall Fired Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Pulverized Coal, Single and Opposed Wall Fired	Coal	NA	0-10	28	9%
1-3, 12-14[a]	Pulverized Coal, Single and Opposed Wall Fired	Coal	250	10-325	180	61%
4-5[b]	Pulverized Coal, Single Wall Fired	Coal	400	325-450	23	8%
6-8, 15-17[a]	Pulverized Coal, Single and Opposed Wall Fired	Coal	500	450-750	33	11%
9-11, 18-20[a]	Pulverized Coal, Single and Opposed Wall Fired	Coal	1,000	>750	32	11%
Boilers Without Specific Capacity Data[c]						
NA	Pulverized Coal, Single and Opposed Wall Fired	Coal	---	Unknown	445	---

[a] These model boilers are grouped together because their only difference is load factor and boiler type, and the database does not provide this information.

[b] These model boilers are grouped together because their only difference is coal type (low vs. high sulfur coal) and the database does not provide this information.

[c] These boilers do not have specific capacity information in the database.

Table IV.A-6. Pulverized Coal, Tangentially Fired Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Pulverized Coal, tangentially fired	Coal	NA	0-10	0	0%
21-23[a]	Pulverized Coal, tangentially fired	Coal	250	10-375	5	15%
24-26[a]	Pulverized Coal, tangentially fired	Coal	500	375-750	8	24%
27-29[a]	Pulverized Coal, tangentially fired	Coal	1000	>750	20	61%
Boilers Without Specific Capacity Data[b]						
NA	Pulverized Coal, tangentially fired	Coal	---	Unknown	36	---

[a] These model boilers are grouped together because their only difference is load factor and the database does not provide this information.

[b] These boilers do not have specific capacity information in the database.

Table IV.A-7. Coal Spreader-Stoker Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Spreader Stoker	Coal	NA	0-10	172	22%
44-46[b]	Spreader Stoker	Coal	100	10-125	401	51%
47-48[a]	Spreader Stoker	Coal	150	125-200	126	16%
49-51[b]	Spreader Stoker	Coal	250	200-350	64	8%
52-54[b]	Spreader Stoker	Coal	500	>350	18	2%
Boilers That Do Not Fit Into Above Model Boiler Categories						
NA	Spreader Stoker	Coal	NA	<100	3	---
NA	Spreader Stoker	Coal	NA	>100	28	---
NA	Spreader Stoker	Coal	NA	Unknown	501	---
NA	Unknown Stoker Type	Coal	NA	Unknown	16	---
NA	Unknown Stoker Type	Coal	NA	0-202	10	---

[a] These model boilers are grouped together because their only difference is coal type (low vs. high sulfur coal) and the database does not provide this information.

[b] These model boilers are grouped together because their only difference is load factor and the database does not provide this information.

Table IV.A-8. Coal Chaingrate Stoker Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Chaingrate Stoker	Coal	NA	0-10	117	30%
42-43[a]	Chaingrate Stoker	Coal	75	10-200	271	70%
Boilers That Do Not Fit Into Above Model Boiler Categories						
NA	Chaingrate Stoker	Coal	NA	>100	3	---
NA	Chaingrate Stoker	Coal	NA	>200	13	---
NA	Chaingrate Stoker	Coal	---	Unknown	321	---

[a] These model boilers are grouped together because their only difference is coal type (low vs. high sulfur coal) and the database does not provide this information.

Table IV.A.-9. Coal Underfeed Stoker Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Inventory Database	Population Distribution of Model Boilers
NA	Underfeed Stoker	Coal	NA	0-10	347	69%
55-56[a]	Underfeed Stoker	Coal	30	10-100	157	31%
Boilers That Do Not Fit Into Above Model Boiler Categories						
NA	Underfeed Stoker	Coal	NA	>100	27	---
NA	Underfeed Stoker	Coal	NA	Unknown	181	---

[a] These model boilers are grouped together because their only difference is coal type (low vs. high sulfur coal) and the database does not provide this information.

Table IV.B-1. >50% Wood Fluidized Bed Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Survey Database	Population Distribution of Model Boilers
NA	Fluidized Bed	>50% Wood[a]	NA	0-10	0	0%
NA	Fluidized Bed	>50% Wood[a]	NA	10-50	10	71%
NA	Fluidized Bed	>50% Wood[a]	NA	50-100	1	7%
NA	Fluidized Bed	>50% Wood[a]	NA	>100	3	21%
Boilers Without Size Information						
NA	Fluidized Bed	>50% Wood[a]	NA	Unknown	0	---

[a] Remainder of fuel is fossil fuel.

Table IV.B-2. >50% Wood Stoker and Dutch Oven Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Survey Database	Population Distribution of Model Boilers
NA	Stokers & Dutch Ovens	>50% Wood[a]	NA	0-10	156	19%
118	Stokers & Dutch Ovens	>50% Wood[a]	30	10-50	380	47%
119	Stokers & Dutch Ovens	>50% Wood[a]	75	50-100	108	13%
120, 122, 123[b]	Stokers & Dutch Ovens	>50% Wood[a]	150	>100	164	20%
Boilers Without Size Information						
NA	Stokers & Dutch Ovens	>50% Wood[a]	NA	Unknown	22	---

[a] Remainder of fuel is fossil fuel.

[b] These model boilers are grouped together because their only difference is wood-fuel type and the database did not provide this information.

Table IV.B-3. >50% Wood Cyclone Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Survey Database	Population Distribution of Model Boilers
NA	Cyclones	>50% Wood[a]	NA	0-10	2	7%
NA	Cyclones	>50% Wood[a]	NA	10-50	25	89%
NA	Cyclones	>50% Wood[a]	NA	50-100	0	0%
NA	Cyclones	>50% Wood[a]	NA	>100	1	4%
Boilers Without Size Information						
NA	Cyclones	>50% Wood[a]	NA	Unknown	1	---

[a] Remainder of fuel is fossil fuel.

Table IV.B-4. >50% Wood Other Model Boilers

Model Boiler ID Number(s)	Model Boiler Type	Fuel Type	Model Boiler Capacity (MMBtu/hr)	Capacity Range Assigned to this Model Boiler (MMBtu/hr)	Number of Boilers in Survey Database	Population Distribution of Model Boilers
NA	Other[a]	>50% Wood[b]	NA	0-10	72	32%
NA	Other[a]	>50% Wood[b]	NA	10-50	119	54%
NA	Other[a]	>50% Wood[b]	NA	50-100	22	10%
NA	Other[a]	>50% Wood[b]	NA	>100	9	4%
Boilers Without Size Information						
NA	Other[a]	>50% Wood[b]	NA	Unknown	5	---

[a] Other boiler types include tangentially fired, wall fired, and unknown boiler types.

[b] Remainder of fuel is fossil fuel.

Table IV.C-1. Fuel Combinations for Non-Fossil Fluidized Bed Boilers

('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations				
Fluidized Bed	10-50MMBtu/hr	Wood	X				
		Total	**1**				
Fluidized Bed	100-250MMBtu/hr	Wood	X				
		Other Solids & Liquids	X				
		Plastics	X				
		Total	**1**				
Fluidized Bed	>250MMBtu/hr	Wood	X			X	
		Coal	X	X	X		
		Fuel Oil	X				
		Natural Gas				X	
		TDF	X			X	
		Sludge		X		X	
		Other Fossil	X				
		Total	**2**	**2**	**8**	**1**	
Fluidized Bed	Unknown Size	Wood	X	X		X	X
		Natural Gas			X		X
		Biomass	X				
		Sludge					X
		High Btu Gas		X			
		Other Fossil				X	
		Other Solids & Liquids			X		
		Total	**2**	**1**	**2**	**3**	**1**

Notes:

1. Any fuel burned <5% by a boiler is not included in these tables.
2. Other Solids & Liquids consists of industrial waste, process solids, process liquids, other solids, and other liquids.
3. Low Btu Gas includes CO gas, blast furnace gas, and any other gas <400Btu/SCF.
4. High Btu Gas includes process derived gas, coke oven gas, digestor gas, landfill gas, biogas, and any other gas >400Btu/SCF.
5. Other Fossil includes peat, petroleum coke, and unspecified fossil fuels.
6. All bagasse boilers in the inventory database are assumed to fire >95% bagasse (no fuel % information available).

Table IV.C-2. Fuel Combinations for Non-Fossil Stokers (Total of 2 pages)

('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations																		
Stoker	0-10MMBtu/hr	Wood	X	X			X														
		Biomass		X																	
		Plastics				X															
		Other Solids & Liquids		X	X		X														
		Total	**5**	**1**	**1**	**1**	**1**														
Stoker	10-50MMBtu/hr	Wood	X	X		X	X			X											
		Coal	X					X													
		Natural Gas						X													
		Bagasse									X										
		Biomass						X													
		MSW					X														
		Waste Oil								X	X										
		Other Solids & Liquids		X	X				X												
		Total	**1**	**2**	**6**	**3**	**1**	**1**	**3**	**2**	**3**	**3**									
Stoker	50-100MMBtu/hr	Wood				X		X				X									
		Coal					X			X		X									
		Fuel Oil	X		X																
		Natural Gas							X												
		Bagasse											X								
		Biomass		X																	
		MSW										X									
		TDF									X										
		Waste Oil	X									X									
		Plastics							X	X											
		High Btu Gas			X		X														
		Low Btu Gas			X																
		Other Solids & Liquids				X															
		Total	**2**	**2**	**8**	**3**	**2**	**9**	**1**	**1**	**5**	**1**	**12**								
Stoker	100-250MMBtu/hr	Wood	X		X	X		X			X	X	X			X					
		Coal			X	X	X	X	X					X	X	X					
		Bagasse															X				
		Biomass		X																	
		MSW										X				X					
		TDF			X									X							
		Waste Oil														X					
		Plastics					X														
		Sludge					X	X			X										
		Other Solids & Liquids								X			X		X						
		Total	**13**	**1**	**2**	**3**	**1**	**1**	**12**	**4**	**3**	**1**	**3**	**1**	**3**	**1**	**7**				

Table IV.C-2. Fuel Combinations for Non-Fossil Stokers (Total of 2 pages)

('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations																	
Stoker	>250MMBtu/hr	Wood		X	X		X	X			X	X	X	X	X	X	X	X	X	X	X
		Coal			X			X	X	X							X	X		X	
		Fuel Oil									X										
		Natural Gas																	X		
		Bagasse	X	X																	
		Biomass																X			
		MSW								X						X			X		
		TDF					X				X	X					X	X			
		Waste Oil																X		X	X
		Sludge			X				X		X				X	X					X
		High Btu Gas										X									
		Other Solids & Liquids				X					X	X	X								X
		Total	**25**	**6**	**2**	**6**	**4**	**25**	**1**	**2**	**1**	**1**	**3**	**33**	**8**	**1**	**2**	**1**	**1**	**1**	**1**
Stoker	Unknown Size	Wood	X		X		X	X	X		X					X				X	
		Coal					X			X			X						X	X	
		Fuel Oil		X	X																
		Natural Gas								X	X	X	X	X							
		Bagasse															X				
		Biomass		X		X												X			
		MSW			X																
		TDF									X										
		Waste Oil		X				X										X	X		X
		Sludge							X		X		X						X	X	
		Other Solids & Liquids								X	X				X	X					
		Total	**32**	**1**	**1**	**2**	**9**	**3**	**11**	**4**	**1**	**1**	**1**	**4**	**8**	**6**	**36**	**1**	**1**	**1**	**1**

Table IV.C-3. Fuel Combinations for Non-Fossil Wall-Fired Boilers

('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations									
Suspension[1]	0-10MMBtu/hr	Natural Gas	X	X								
		Plastics	X									
		Waste Oil			X							
		Total	**2**	**1**	**1**							
Suspension[1]	10-50MMBtu/hr	Wood		X								
		Fuel Oil	X									
		Natural Gas	X		X		X	X				
		Waste Oil					X					
		Plastics						X				
		High Btu Gas	X									
		Other Solids & Liquids				X						
		Total	**2**	**3**	**7**	**2**	**2**	**1**				
Suspension[1]	50-100MMBtu/hr	Fuel Oil		X								
		Natural Gas	X	X	X							
		Waste Oil				X						
		Low Btu Gas		X								
		High Btu Gas				X						
		Other Solids & Liquids			X	X						
		Total	**19**	**1**	**4**	**1**						
Suspension[1]	100-250MMBtu/hr	Coal			X							
		Fuel Oil				X	X					
		Natural Gas	X			X						
		Bagasse						X				
		Waste Oil					X					
		High Btu Gas					X					
		Other Fossil			X							
		Other Solids & Liquids		X								
		Total	**27**	**4**	**1**	**5**	**1**	**3**				
Suspension[1]	>250MMBtu/hr	Wood										X
		Coal	X	X		X			X		X	X
		Fuel Oil			X			X				
		Natural Gas						X		X	X	
		MSW							X			
		TDF				X						
		Sludge									X	
		Other Solids & Liquids		X			X	X				
		Total	**13**	**4**	**14**	**2**	**1**	**1**	**1**	**24**	**3**	**1**
Suspension[1]	Unknown Size	Coal		X	X							
		Fuel Oil	X									
		Natural Gas		X		X	X					
		Other Solids & Liquids		X		X						
		Total	**6**	**2**	**14**	**3**	**10**					

[1] Consists of wall-fired, tangentially-fired, and cyclone boilers.

Table IV.C-4. Fuel Combinations for Non-Fossil Other Boiler Types (Total of 2 pages)
('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations										
Other	0-10MMBtu/hr	Wood			X	X		X					
		Fuel Oil	X										
		Natural Gas		X									
		MSW				X							
		Waste Oil							X				
		High Btu Gas	X										
		Other Solids & Liquids			X		X						
		Total	**3**	**17**	**2**	**1**	**2**	**1**	**3**				
Other	10-50MMBtu/hr	Wood		X	X	X		X					
		Coal			X								
		Fuel Oil	X										
		Natural Gas					X						
		Bagasse									X		
		Biomass				X							
		Waste Oil								X			
		Plastics						X					
		Other Solids & Liquids						X	X				
		Total	**5**	**6**	**1**	**1**	**10**	**1**	**3**	**2**	**19**		
Other	50-100MMBtu/hr	Fuel Oil	X	X									
		Natural Gas		X	X								
		Bagasse					X						
		Waste Oil	X										
		Other Solids & Liquids				X							
		Total	**3**	**9**	**7**	**3**	**17**						
Other	100-250MMBtu/hr	Wood			X								
		Coal	X										
		Fuel Oil	X	X		X							
		Natural Gas				X	X						
		Bagasse			X				X				
		Other Gas				X							
		Other Solids & Liquids		X				X					
		Total	**2**	**3**	**1**	**2**	**21**	**4**	**17**				
Other	>250MMBtu/hr	Wood		X				X					
		Fuel Oil			X								
		Natural Gas				X	X						
		Bagasse	X	X									
		High Btu Gas					X						
		Low Btu Gas			X								
		Other Solids & Liquids					X						
		Total	**9**	**1**	**2**	**21**	**3**	**2**					

Table IV.C-4. Fuel Combinations for Non-Fossil Other Boiler Types (Total of 2 pages)
('Total' refers to the number of boilers firing a particular fuel combination)

Combustor Type	Capacity Range	Fuels	Fuel Combinations										
Other	Unknown Size	Wood		X	X						X		
		Fuel Oil					X		X				
		Natural Gas					X	X	X	X			
		Bagasse											X
		Biomass	X										
		MSW			X								
		Waste Oil						X				X	
		Plastics		X			X						
		High Btu Gas						X					
		Other Solids & Liquids				X		X					
		Total	**1**	**1**	**1**	**6**	**1**	**1**	**7**	**16**	**2**	**1**	**45**